Effectiveness of ocular and dental exercises for correction of forward head posture in young adults

A SYNOPSIS OF THE THESIS
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Introduction

- Posture is the position of the body in the space, and is controlled by a set of anatomical structures. The maintenance and the control of posture are a set of interactions between muscle-skeletal, visual, vestibular, and skin system.[1]
- Forward head posture are thought to be related to muscle imbalance, which disturbs length tension relationship of muscles.
- However, multiple studies have demonstrated a relationship between dental malocclusion and posture defects [2]
- Vergence insufficiency is a common oculomotor disorder which causes visual but also general, and even postural symptoms [3]

Need for the study

- Many physiotherapy treatment options are available to correct forward head posture which is focused to correct the muscle imbalance and restore the normal posture of cervical spine and shoulder.
- However none of the popular interventions treat the dental malocclusion or the vergence insufficiency, causing the postural imbalances to re-emerge.
- This study will help to establish a more holistic approach for postural correction

Review of Literature

- Armando Silvestrini-Bilavati et al conducted a study on to understand whether there is any connection present in situation where the patient's forcibly carryout functional compensation in different body distracts. Concluded that it is not possible to say whether there is direct connection among them but we may assumed that there may be connection between them. Resulted that patients with overbite were found to have an unphysiological gate was about 14.7% whereas people with normal occlusion that manifest an unphysiological gate is 13.8%. So subject with an open bite and deep bite show the differ distribution of right or left dominant eye.

- A.Manaco et al conducted study on to examining relationship between mandible deviation and ocular conversion defect. Concluded that ocular conversions defect was more experienced in patients who have functional mandibular deviations. This resulted in that there is a high correlation found between the mandibular deviation and convergence defects.

Cont’d

- Cristina Grippaudo et al This study is conducted to correlate the visual defect and mandibular deviations in the sample growing patients to assess their body posture. Concluded that there had been a relationship that may exist between 3 planes of malocclusions with ocular disorders.

- N.S Pradham et al This study was conducted to the relationship between a vision in head posture and mandibular deviations. Concluded that there is a high tendency for a dominant eye to move the head on the ipsilateral side and the contralateral side making the compensatory movement of the mandible joint for balance. This resulted that there is a relationship between the eye dominance and the head rotation which is why the head rotation on the ipsilateral side was more significant on the side of the dominant eye in both TMJ and controlled group.

Aims and Objectives

- To determine the effectiveness of dental and ocular exercises for the correction of forward head posture in young adults

Hypothesis

Null hypothesis : There is no significant effect of dental and ocular exercises for the correction of forward head posture in young adults

Alternate hypothesis: There is significant effect of dental and ocular exercises for the correction of forward head posture in young adults

Materials and Methods

- Study design :Single blinded, Randomized Controlled Trial (RCT)
- Sample size :120 participants
- Study location : Delhi NCR
- Allocation: Randomized using computer generated software ‘research randomizer’
- Sampling : Convenient sampling
- Analysis: SPSS

Outcome Measures

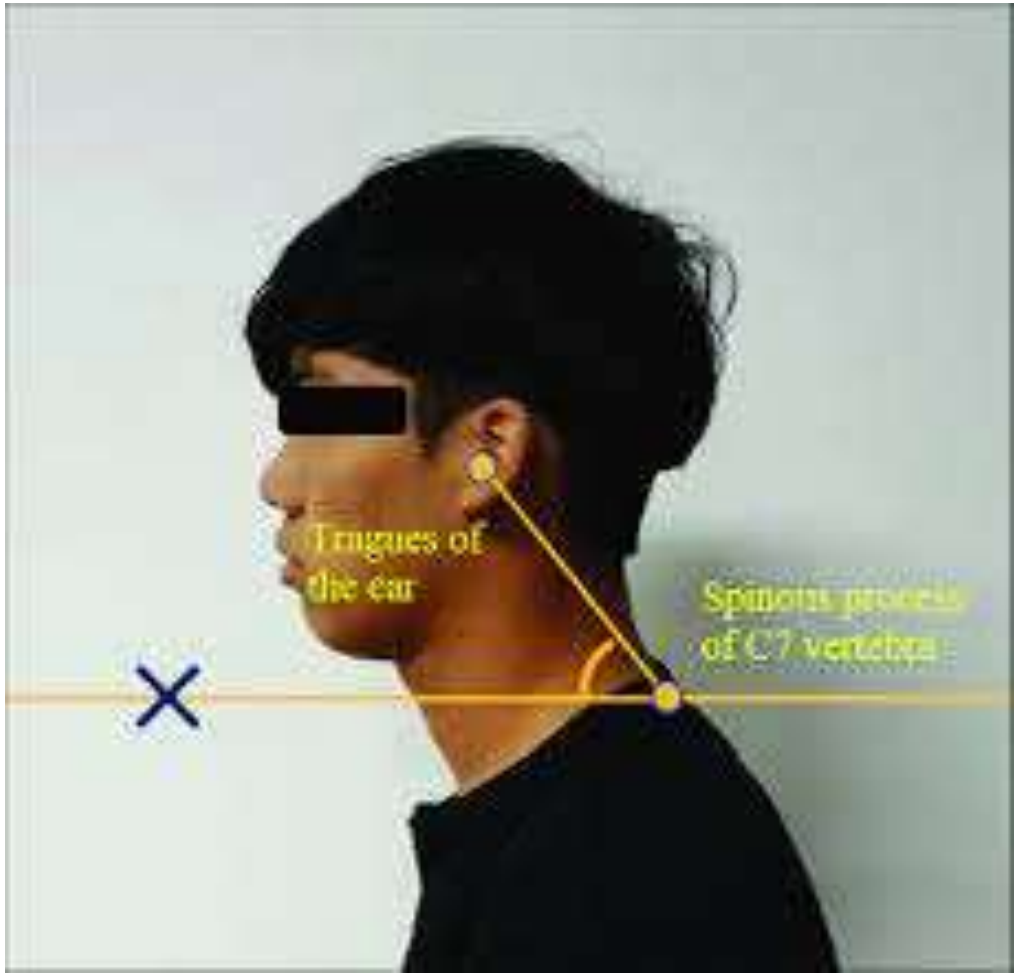
- Craniovertebral angle

The angle between the line from the external auditory meatus to the seventh cervical vertebra and a horizontal line at the level of the seventh cervical vertebra using photogrammetry

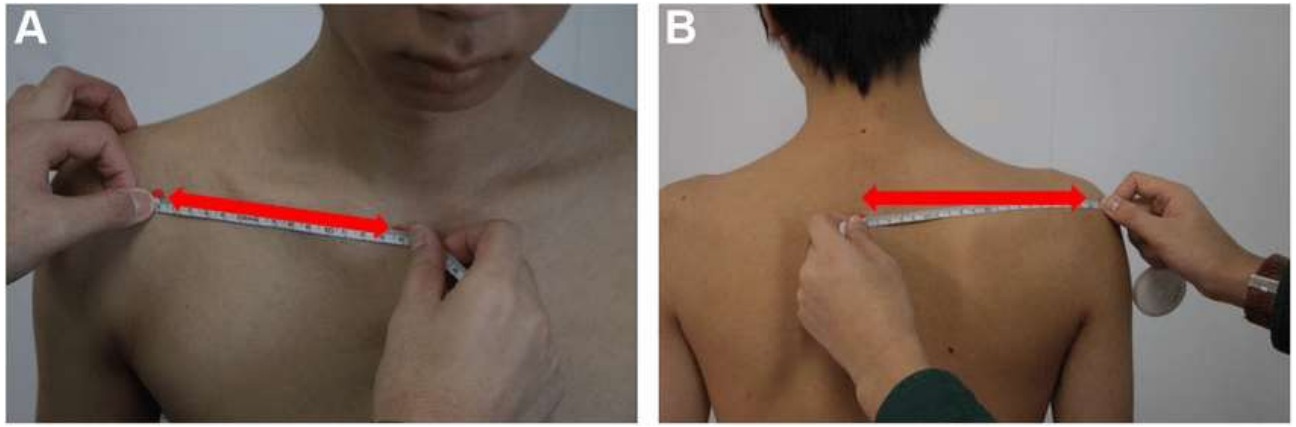
- Scapular Index

It's the ratio of the length of the scapula to its breadth multiplied by 100 and will be measured

- Neck range of motion
- Neck disability index



Craniovertebral angle



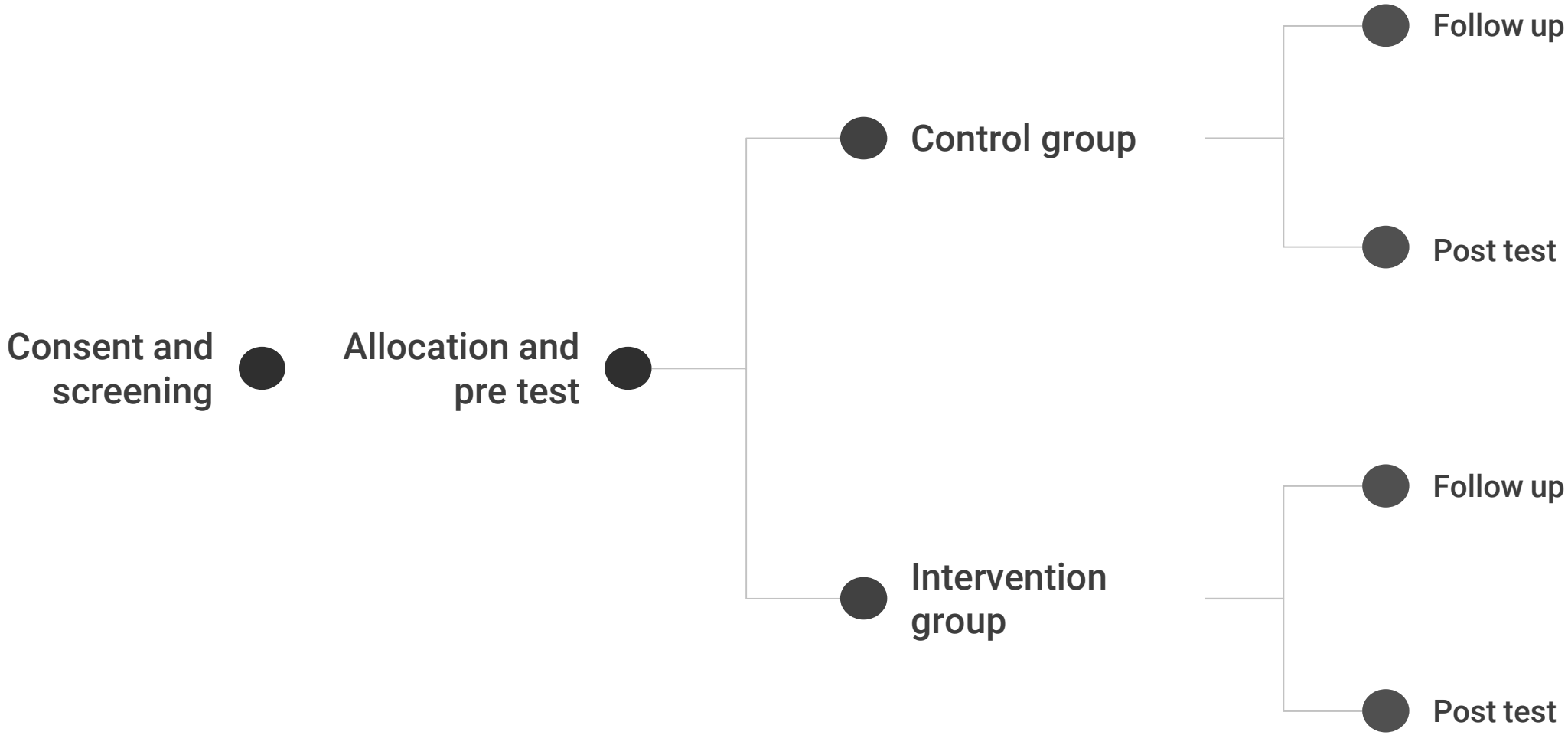
Scapular Index

Inclusion Criteria:

- Age-18 to 25 years
- Individuals having Craniovertebral Angle (CVA) less than 50 degree
- Individuals having Shoulder Angle (SA) less than 52 degree.
- Those who had not under any regular exercise for last 6 months
- Those who use a smartphone or computer for at least 4 hours or more per day on average.

Exclusion Criteria:

- Individuals will be excluded if they have visual deficits, diagnosed balance disorders, musculoskeletal pathologies (e.g. history of shoulder surgery, cervical or thoracic fracture, Osteosarcoma, Myeloma), non-ambulatory, displayed functional or structural scoliosis, or had excessive thoracic kyphosis.
- Individuals having symptoms of Vertebral Artery Insufficiency.
- Individuals not willing to participate or to follow up treatment plan.


Consent and screening
Allocation and pre test
Control group
Follow up
Post test
Intervention group
Follow up
Post test

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